Attorney's Docket No. K&A 22-0317

APPLICATION

FOR UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT I, **CARTER TYNDALL**, a citizen of UNITED STATES OF AMERICA, have invented a new and useful **FLAIR-UP RESISTANT FRONT LOADING ROASTING SYSTEM** of which the following is a specification:

FLAIR-UP RESISTANT FRONT LOADING ROASTING SYSTEM

Cross Reference to Related Application

This application is a substitute application for utility patent application Serial No. 08/796,794.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to gas fired ovens and more particularly pertains to a new flair-up resistant front loading roasting system for roasting large quantities safely with a reduced potential for grease induced flair-ups during cooking.

Description of the Prior Art

The use of gas fired ovens or cooking devices is known in the prior art. Known prior art Cooking Devices include U.S. Patent 4,810,856; U.S. Patent 4,114,523; U.S. Design Patent 349,419; U.S. Patent 5,431,093; U.S. Patent 4,510,854 and U.S. Patent 5,373,778.

SUMMARY OF THE INVENTION

The system includes a roasting enclosure adapted for receiving meat to be roasted. The roasting enclosure has a bottom wall, back wall, front wall, pair of side walls, and a door. The side walls taper from the top of the back wall downwardly to a top of the front wall. The door has a top door front wall and a pair of side walls. With the door closed the roasting enclosure has a generally rectangular cross section. A rotating assembly is operationally coupled to the roasting enclosure. A shaft member removably engaged by the rotating assembly. The shaft member is used to pierce and hold at least one piece of meat to be roasted. At least one burner is positioned within the roasting enclosure.

There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

The objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

Figure 1 is a schematic front view of a new flair-up resistant front loading roasting system according to the present invention.

Figure 2 is a schematic side view of the present invention.

Figure 3 is a schematic side view of the present invention.

Figure 4 is a schematic detail view of the rotating means of an embodiment of the present invention.

Figure 5 is a schematic front view of the present invention with the door in an open position.

Figure 6 is a schematic cross-sectional view of the present invention taken along line 6-6 of figure 5.

Figure 7 is a schematic detail view of the linear actuator assembly of the present invention.

Figure 8 is a schematic detail view of the collar guides and carrier bearing of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the drawings, and in particular to Figures 1 through 8 thereof, a new flair-up resistant front loading roasting system embodying the principles and concepts of the present invention and generally designated by the reference numeral 10 will be described.

As best illustrated in Figures 1 through 8, the flair-up resistant front loading roasting system 10 generally comprises a roasting enclosure 20, a rotating means 30, and a shaft member 50.

The roasting enclosure 20 includes a back 21 and a pair of sides 22,23. The roasting enclosure 20 also includes a door 40 for facilitating access to an interior portion of the roasting enclosure 20. The roasting enclosure 20 includes a pair of apertures. Each one of the apertures extends through an associated one of the sides 22,23.

The rotating means 30 is operationally coupled to the roasting enclosure 20.

The shaft member 50 engages the rotating means 30 and is removable. The shaft member 50 includes a proximal end 51 and a distal end 52. The proximal end 51 may be engaged with the rotating means 30. The shaft member 50 is positionable substantially within the roasting enclosure 20. The proximal end 51 extends outwardly through a first one of the apertures. Similarly, the distal end 52 extends outwardly from a second one of the pair of apertures. A heating means 60 is preferably positioned within the roasting enclosure 20.

In an embodiment the roasting enclosure 20 further comprises and interior wall (or shell) 25, an exterior wall (or shell) 26, and a quantity of insulating material 27. The interior wall 25 has a spaced parallel relationship with the exterior wall 26, and is operationally coupled to the exterior wall 26. The interior 25 and exterior walls 26 define a wall interior space. The insulating material 27 is positioned within and substantially fills the wall interior space. The insulating material 27 inhibits radiated heat transfer between an interior of the roasting enclosure 20 and an external surface of the exterior wall 26.

The roasting enclosure 20 may also be defined in terms of a bottom wall 28, back, wall 21, front wall 29, pair of side walls 22,23, and a door 24. The bottom wall 28 provides a base for the roasting enclosure 20. The bottom wall 28 includes a back edge, a front edge, and a pair of side edges. The back wall 21 is operationally coupled to the bottom wall 28 adjacent to the back edge of the bottom wall 28. Similarly, the front wall 29 is operationally coupled to the bottom wall 28 adjacent to the front edge of the bottom wall 28. The front wall 29 has a height less than a height of the back wall 21. Each one of the pair of side walls 22, 23 is operationally coupled to the bottom wall adjacent to an associated one of the side edges of the bottom wall 28. Each one of the side walls 22,23 tapers from the top of the back wall 21 to the top of the front wall 29. The door 40 is preferably pivotally coupled to the back wall 21. The door 40 is for selectively opening and closing the roasting enclosure 20. The back 21, front 29, and side walls 22,23 and the door 40 each includes an interior wall 25

and an exterior wall 26 with insulating material 27 positioned between the interior 25 and exterior 26.

In an embodiment the door 40 further comprises a top wall 41, a door front wall 42, and a pair of door side walls 43,44. The top wall 41 may be pivotally coupled to the back wall 21. The top wall 41 has a width approximately equal to a width of the bottom wall 28. The door front wall 42 is coupled to the top wall 41, and extends from the top wall 41 to a top edge of the front wall 29 when the door 40 is in a closed position. The pair of door side walls 43,44 are each operationally coupled to the top wall 41. Each one of the pair of door side walls 43, 44 is positioned adjacent an associated side of the top wall 41. The pair of door side walls 43,44 taper from the top wall 41 to a bottom edge of the door front wall 42. Preferably, the door 40 is shaped such that the roasting enclosure 20 has a rectangular cross-section when the door 40 is in a closed position.

Preferably, the rotating means 30 comprises an electric motor 31 operationally coupled to the roasting enclosure 20. The electric motor 31 includes a rotating shaft 32 extending therefrom. A drive member 33 may be coupled to the rotating shaft 32. The drive member 33 facilitates transfer of rotational energy from the rotating shaft 30 to the shaft receiving assembly. A switch member 34 may also be used for selectively applying and interrupting electrical power to the electric motor 31 whereby the electric motor 31 may be turned on and off.

In a preferred embodiment, the rotating means 30 causes the shaft member 50 to rotate at nine rpm with a direction of rotation

that caused the shaft 50 to rotate downwardly towards the front of the roasting enclosure 20, and upwardly towards the back of the roasting enclosure 20. This direction of rotation causes most of the grease dripping from the meat being roasted to drip off at the rear of the roasting enclosure 20 rather than the front, helping to minimize flair-ups.

In an embodiment the shaft receiving assembly further comprises a rotating member 58, a pair of collar members or guides 53, and a first 55 and second pair of carrier bearings 56. The rotating member 58 is used for engaging the drive member 33 such that rotation of the rotating shaft 32 moves the drive member 33 which in-turn rotates the rotating member 58. Each one of the collar guides 53 is positioned adjacent to an associated one of the apertures. Each one of the collar guides 53 facilitates positioning of the shaft member 50 such that the shaft member 50 may be rotated by the rotating member 58. The first pair of carrier bearing 55 is positioned adjacent to a first one of the apertures for facilitating support and rotation of the shaft member 50. Similarly, the second pair of carrier bearing 56 is positioned adjacent to a second one of the apertures for facilitating support and rotation of the shaft member 50.

In an embodiment the heating means 60 further comprises at least one gas burner 61, a gas supply line 62, a thermostat 63, and at least one pilot safety control 64. The burner 61 is preferably positioned in a lower portion of the roasting enclosure 20. The gas supply line 62 includes a first and second end. The first end is operationally coupled to the burner 61. The second end extends through a wall of the roasting enclosure to an exterior environment.

The second end is couplable to a gas supply. The gas supply may be propane or natural gas and may be either supplied by bottle or through an installed supply line. The thermostat 63 is operationally coupled to the gas supply line 62 for controlling a temperature internal to the roasting enclosure 20. The pilot safety control 64 is used such that flow of gas through the gas supply line 62 is interrupted if a pilot light is extinguished.

A linear actuator assembly 70 is preferably operationally coupled to a side of the roasting enclosure 20 and the door 40. The linear actuator assembly 70 facilitates opening and closing of the door 40.

In an embodiment the linear actuator assembly 70 further comprises a first coupling member 71 operationally coupled to the door 40. A second coupling member 72 is operationally coupled to a side of the roasting enclosure 20. A jacking screw 73 is routed through the first 71 and second coupling members 73 such that rotating the jacking screw 73 in a first direction opens the door 40, while rotating the jacking screw in a second direction closes the door 40. A linear actuator drive motor 75 is operationally coupled to the jacking screw 73. The linear actuator drive motor 75 converts electrical energy into rotational energy. An actuator control switch 76 is operationally coupled to the linear actuator drive motor 75 for controlling rotating and direction of rotation of the linear actuator drive motor 75.

A plurality of wheels 76 may be coupled to an exterior surface of the bottom wall 28 for facilitating moving the system 10.

A poultry assembly 35 may be couplable to the shaft member 50. The poultry assembly 35 is designed for engaging a plurality of fowl for facilitating rotisserie style roasting.

In an embodiment the poultry assembly 35 further comprises a plurality of spacing members 36 couplable to the shaft member 50. A plurality of secondary shaft members 37 are positionable between the spacing members 36. A plurality of fowl engagement members 38 slideably engages with the secondary shafts 37. Each one of the fowl engagement members 38 includes at least one prong 39 for insertion into the fowl for securing the fowl to the poultry assembly 35.

A drip pan 66 may be removably positioned within the roasting enclosure 20 between the shaft member 50 and the heating means 30. The drip pan 66 is for collecting grease produced during roasting.

An exhaust port 24 extends through a wall of the roasting enclosure 20 facilitating ventilation of an interior of the roasting enclosure.

In an embodiment, the interior 25 and exterior walls 26 of the roasting enclosure 20 are made from stainless steal. Additionally, the system 10 is optimally sized with an overall length of approximately 60 inches, an overall height of approximately 36 inches, and an overall width of approximately 24 inches.

In use, either the shaft member individually or in conjunction with the poultry assembly is used to secure the carcass or carcasses

of the animals to be roasted. The system is ideally designed for use with pigs, chickens, and turkeys; but all manner of animals including but not limited to beef, lamb, ducks, geese, pheasants, and goats may also be used. The shaft member is positioned on the collar guides. Thus the shaft is operationally coupled to the rotating member. The burner is ignited and the animal is roasted inside of the roasting enclosure. The rotating means may be activated during all or part of the roasting process as desired by the user.

With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.